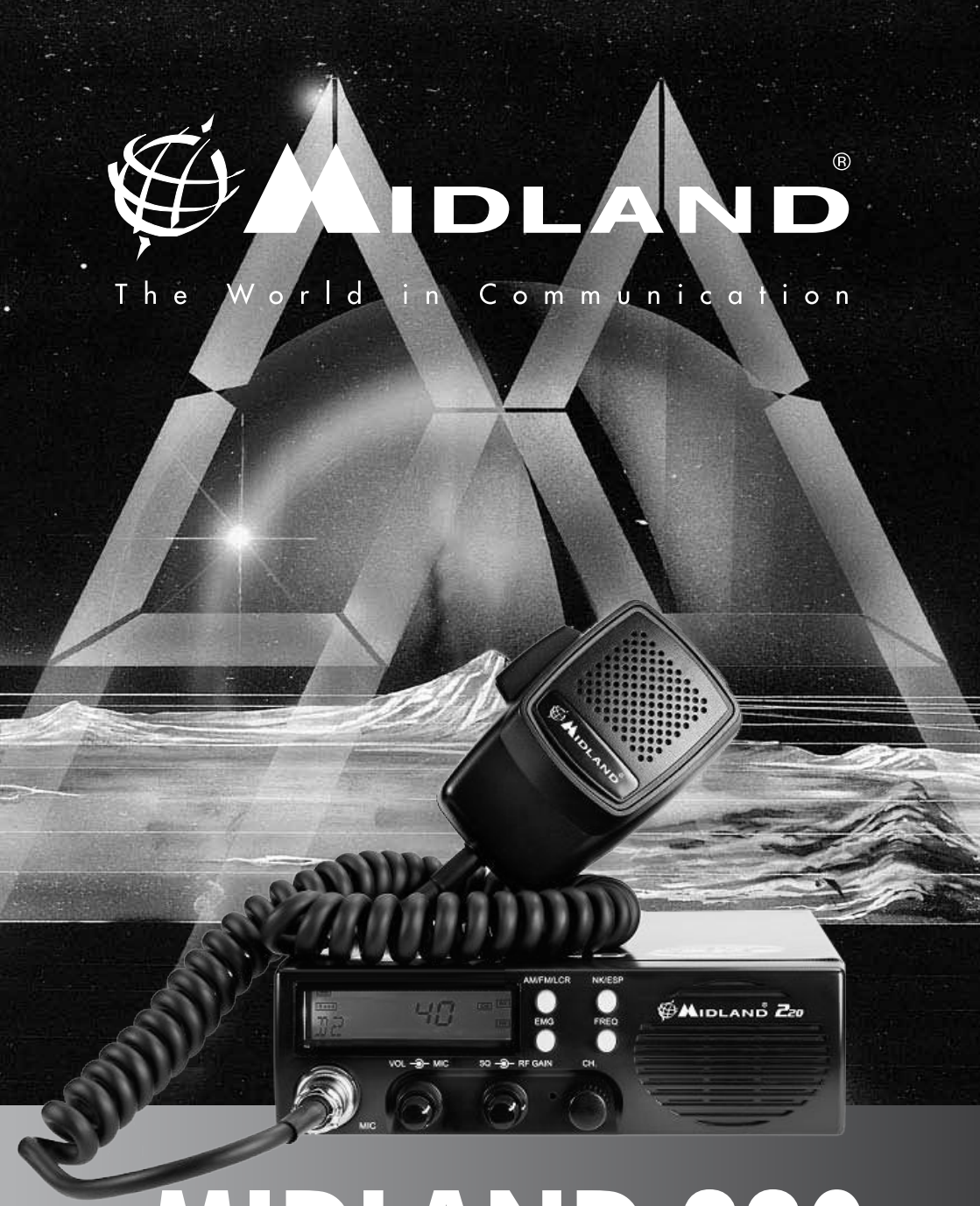
MIDLAND®

The World in Communication



MIDLAND 220

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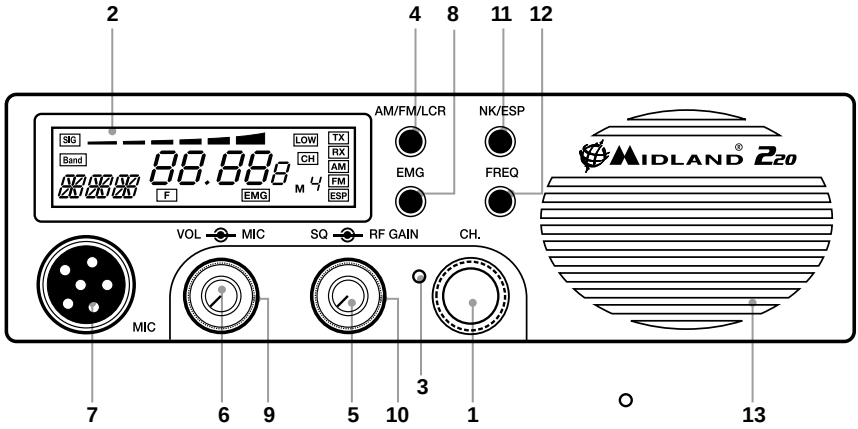
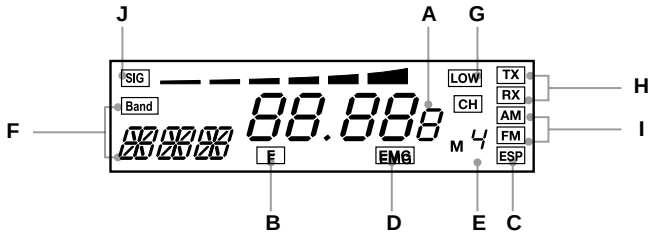
Midland 220 is the brand new Multi Standard CB transceiver, essential in its functionalities but with advanced performances, such as the ESP2 (noise killing device).
Midland 220 is a very practical radio, very easy to install even into the DIN housing of the vehicles (usually suitable for car radios).
As required by this kind of installation the speaker is on the front panel to guarantee a high-quality acoustic level.
MIDLAND 220 is supplied with a microphone with UP/DOWN buttons, mounting bracket and adaptor for DIN mounting.

FUNCTIONS AND LOCATION OF THE CONTROLS



1. **Channel selector**: it permits the manual channel selection.
2. **Multifunction back-lighted display**. It shows:



A) Selected channel (from 1 up 40) or operative frequency
B) **FREQ** button activated
C) **ESP**: reducing noise device activated
D) **EMG**: indicates channel being used or when the emergency channels are activated
E) **M1 – M4**: memory channel indicator
F) Indicates the frequency band selected
G) Appears when the radio transmits in low power (this condition happens only in some frequency bands – see the chart at the end of the manual)
H) **RX/TX: reception (RX) / transmission (TX) indicator.**
I) AM/FM mode.
J) Received signal strength and transmitted signal power.

3. **Button for changing colour**: by pushing a pointed object into the hole, you can change the backlight colour of the display. You can choose amongst the following colours: white, yellow, violet, red, light blue, green, blue or no colour.
4. **"AM/FM"(LCR) button**: To select AM or FM mode. If you select a frequency band operating in FM mode only, this button enables the LCR function (Last Channel Recall).
5. **"Squelch" Control**: For the maximum receiver sensitivity, the control must be regulated exactly where the receiver background noise disappears.

6. **“ON/OFF Volume” Control**. In “OFF” position your transceiver is OFF. “VOLUME” position: by turning this knob, you set the audio level.
7. **Microphone jack:** Insert the mic connector into this jack.
8. **EMG button:** Emergency channel. By pressing it, the unit will be automatically positioned on CH 9/19 (emergency channels). The display will show “EMG”. It will not be possible to accidentally change the channel.
9. **“Mic (Microphone) Gain Control”:** in TX mode, it controls the microphone amplification. The best results are obtained by getting the best modulation: use the mike by trying to find the optimal amplification level and distance from your mouth.
10. **“RF” (Radio Frequency) Gain Control:** it controls the reception sensitivity. To increase the sensitivity, simply turn it clockwise. Sensitivity decreases turning it counterclockwise. Low sensitivity is useful in case of very strong signals.
11. **“N.K./ESP” button**

    Pressing this switch, you activate the noise killing device. Receiver noise and interference can now be largely eliminated by the ESP2 system.
12. **FREQ button**

    With this button, you can:
    - visualize the operative frequency (if you keep pressing the button for 3 seconds approx.), or the channel in use;
    - activate the second functions of the “M” (M1/M4) buttons.

    M1 / M4:

    MIDLAND 220 has the possibility to store and to recall, when necessary, 2 channels previously memorized.

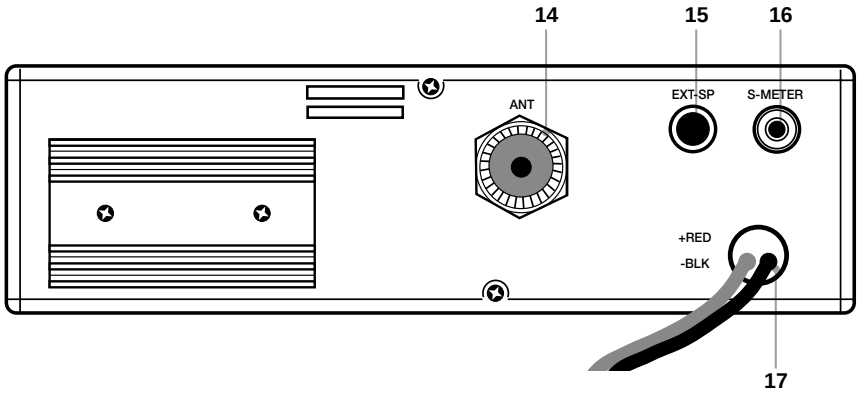
    To memorize one channel, follow the procedure herebelow:

    A) Select the channel with the appropriate selector or the “UP/DN” buttons on the microphone;
    B) Push the “FREQ” button: the display will show “F”;
    C) Keep pressed the “AM/FM/LCR” button for 3 seconds: you will hear a “BIP” and the display will show “M1”.

    To memorize the other channels, repeat these steps and press “EMG”.

    To recall a channel previously stored, push the “FREQ” switch and then “AM/FM/LCR” (M4) or “EMG” (M1).
13. **Front speaker**

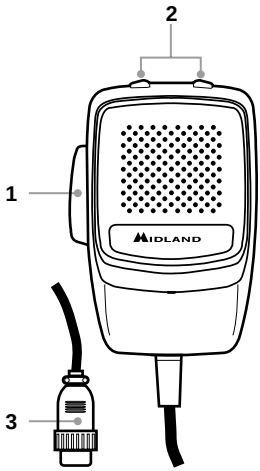
REAR PANEL



14.Antenna connector (SO239 connector type)
15."EXT" jack: external loudspeaker jack.(the internal loudspeaker is excluded)
16.S.Meter jack: it allows an external "S. Meter" connection
17.Power 13.8V DC: power supply cable

MICROPHONE

1. **PTT:** transmission button
2. **UP/DOWN buttons:** manual channel selector.
3. **6 pin microphone connector**



INSTALLATION

Safety and convenience are the primary considerations for mounting any piece of mobile equipment. All controls must be readily available to the operator without interfering with the movements necessary for safe operation of the vehicle. Interference from the connecting cables may contribute to the loss of control of the vehicle.
Set the proper position in the car to install the transceiver using the supplied supporting bracket or eventually the DIN mounting bracket.
Tighten the retaining screws. The mounting bracket must be close to metallic parts.

POWER SUPPLY

Be sure the transceiver is OFF. In the direct-voltage power supply, it is very important to observe the polarity even if the unit is protected against the accidental inversion:
Red = positive pole (+)
Black = negative pole (-)
The same colours are present on the battery and in the fuse box of the car. Correctly connect the cable terminal to the battery.

INSTALLING AN ANTENNA

1. Place the antenna as high as possible
2. The longer the antenna is, the better will be the performance
3. If possible, mount the antenna in the centre of whatever surface you choose
4. Keep antenna cable away from noise sources, such as the ignition switch, gauges,etc.
5. Make sure you have a solid metal-to-metal ground connection.
6. Prevent cable damage during antenna installation.

WARNING: To avoid damage, never operate your CB radio without connecting a proper antenna. A periodical control of the cable and of the S.W.R. is recommended.

HOW TO OPERATE YOUR TRANSCEIVER

1. Screw the microphone plug into the microphone jack.
2. Make sure your antenna is connected to the antenna connector.
3. Make sure the SQUELCH control is turned fully conterclockwise.
4. Turn on the unit and adjust the volume control.
5. Select your desired channel.
6. To transmit, press the PTT button and speak in a normal tone of voice.
7. To receive, release the PTT button.

FREQUENCY BAND SELECTION

The frequency bands must be chosen according to the country where you are going to operate.
Procedure:
1. Switch off the unit.
2. Turn it on while pushing the “N.K./ESP” button.
3. Select the desired frequency band by pushing the UP / DOWN buttons (see the chart here below).

Wait for 5 seconds or switch off and then on the radio.

NOTE1: In the UKE or UKC frequency bands, you can select directly the other band by pushing the

“AM/FM/LCR” button for 3 seconds.
NOTE2: If you select a frequency band which operates in FM mode only, the “AM/FM/LCR” control enables the LCR function (last channel recall).

FREQUENCY BAND CHART

Digits displayed	Country	Band	Frequency
I	Italy	**40CH AM/FM 4W**	**Fx 26,965-27,405 MHz**
I2	Italy	**34CH AM/FM 4W**	**Fx 26,875-27,265 MHz**
D	Germany	**80CH FM 4W 12CH AM 1W**	**Fx 26,565-27,405 MHz**
D2	Germany	**40CH FM 4W 12CH AM 1W**	**Fx 26,965-27,405 MHz**
D3	Germany	**80CH FM 4W 40CH AM 1W**	**Fx 26,565-27,405 MHz**
EU	Europe	**40CH FM 4W 40CH AM 1W**	**Fx 26,965-27,405 MHz**
EC	Europe	**40CH FM 4W**	**Fx 26,965-27,405 MHz**
E	Spain	**40CH AM/FM 4W**	**Fx 26,965-27,405 MHz**
F	France	**40CH FM 4W 40CH AM 1W**	**Fx 26,965-27,405 MHz**
UKE	England	**40CH FM 4W**	**Fx 26,60125-27,99125MHz**
UKC	England	**40 CH FM 4W CEPT**	**Fx 26,965-27,405MHz**
PL	Poland	**40CH AM/FM 4W**	**Fx 26,960 – 27,400MHz**

ATTENTION!
The frequency band allowed all over Europe is 40 CH FM 4W (EC).

TECHNICAL SPECIFICATIONS

GENERAL

Channels .....40 FM (see the frequency band chart)
Frequency Range ..... 25.615 to 30.105 MHz
Frequency Control ..... PLL
Operating Temperature Range ..... 10°/+55° C
DC input voltage .....13.8V DC ±15%
Duty cycle..... 5/5/90 (1 hour of use)
Size .....170 (L)x 52 (H)x 170 (D) mm
Weight .....1,020 kg

RECEIVER

Receiving system .....dual conversion superheterodyne
Intermediate frequency .....I° IF: 10.695 MHz • II° IF: 455 KHz
Sensitivity ..... 1µV for 20 dB SINAD
Audio output power @10% THD .....> 4.0W @ 8 Ohm (external speaker)
.....> 2.0W @ 8 Ohm (internal speaker)
Audio distortion .....less than 3% @ 1 KHz
Current drain at stand/by 200mA

TRANSMITTER

Output power..... 4W @ 13.8V DC
Modulation.....AM: from 85% to 95%
.....FM: 1,8 KHz ± 0,2 KHz
Current drain.....1100mA (Power position with no modulation)

All specifications are subject to change without notice.

A readily accessible disconnect device shall be incorporated in the installation wiring.
The disconnect device shall disconnect both poles simultaneously.